

## CLAIMS

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2       1.     A method, comprising:  
3       retrieving printing device data from component memory of a replaceable  
4     component from a printing device used by a customer;  
5       storing the printing device data in a customer database;  
6       associating the printing device data with the customer; and  
7       accessing the printing device data in the customer database to assist the  
8     customer with solving problems related to the printing device  
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10       2.     The method as recited in claim 1, wherein the printing device data  
11     further comprises information that uniquely identifies the printing device.  
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13       3.     The method as recited in claim 1, wherein the printing device data  
14     further comprises information regarding usage of the printing device.  
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16       4.     The method as recited in claim 1, wherein the accessing the  
17     printing device data in the customer database further comprises accessing  
18     previously stored database information related to the customer.  
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20       5.     The method as recited in claim 4, wherein the previously stored  
21     database information is derived from memory of previously returned  
22     components.  
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24       6.     The method as recited in claim 4, wherein the previously stored  
25     database information is derived from information submitted by the customer on  
   a registration card.

1           7.     The method as recited in claim 1, wherein the printing device is a  
2 laser printer and the replaceable component is a toner cartridge.

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4           8.     The method as recited in claim 1, further comprising associating  
5 rules to be followed when printing device data associated with a customer  
6 meets certain criteria.

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8           9.     The method as recited in claim 1, further comprising:  
9 testing the replaceable component for a defect;  
10 if a defect is found, storing defect information in the customer database;  
11 associating the defect information to one or more other customers  
12 referred to in the customer database that use a similar replaceable component;  
13 and

14           wherein the accessing the printing device data further comprises  
15 accessing the defect information in the customer database.  
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1           **10.**    A system, comprising:

2           a recycling center to receive a used printing device replaceable  
3 component from a printing device of a customer, the printing device  
4 replaceable component including component memory integrated therewith;

5           a customer database that stores customer information for multiple  
6 customers, including printing devices and printing device replaceable  
7 components used by the customers;

8           a data transfer center wherein printing device data is retrieved from the  
9 component memory and stored in the customer database; and

10          a customer service center configured to receive calls from the customer  
11 and provide operator access to the customer database so that the operator can  
12 view the printing device data.

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14          **11.**    The system as recited in claim 10, wherein the printing device  
15 data further comprises printing device usage information that is stored by the  
16 printing device when the printing device is operating with the replaceable  
17 component installed.

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19          **12.**    The system as recited in claim 10, wherein the printing device  
20 data further comprises information that uniquely identifies the printing device  
21 in which the replaceable component was used.

1           **13.**    The system as recited in claim 10, wherein:

2           the printing device data further comprises a customer identifier that  
3 uniquely identifies the customer utilizing the printing device;

4           the database further stores the customer identifier and associate the  
5 customer identifier with the customer information related to the customer  
6 identified by the customer identifier; and

7           the customer service center is further configured to display the customer  
8 information related to customer in response to input of the customer identifier.

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10          **14.**    The system as recited in claim 10, further comprising a quality  
11 assurance center where used printing device replaceable components are tested  
12 for defects and wherein the customer database further stores data regarding a  
13 defect detected in a defective replaceable component for each customer having  
14 customer information stored about a replaceable component similar to the  
15 defective replaceable component.

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17          **15.**    The system as recited in claim 10, wherein the printing device  
18 comprises a laser printer and the replaceable component comprises a toner  
19 cartridge.

1           **16.**    A method for assisting customers having problems with printing  
2 devices that use replaceable components with integrated component memory,  
3 the method comprising:

4                compiling data retrieved from the component memory of a plurality of  
5 replaceable components into a customer database;

6                accessing the customer database to view compiled data that is related to  
7 a specific customer or to a printing device that is used by a specific customer to  
8 resolve a problem the customer is having with the printing device.

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10           **17.**    The method as recited in claim 16, further comprising storing  
11 customer information for a customer in the customer database and associating  
12 the customer information with compiled data that is related to a printing device  
13 used by the customer.

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15           **18.**    The method as recited in claim 17, further comprising acquiring  
16 the customer information for the customer from a registration card used to  
17 register the customer as the purchaser of the printing device used by the  
18 customer.

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20           **19.**    The method as recited in claim 17, further comprising associating  
21 the customer information with general data related to a printing device or  
22 printing device replaceable component used by a customer.

1           **20.**    A database stored on one or more computer-readable media, the  
2 database comprising a plurality of records, each record further comprising:

3           a customer field that contains a value that uniquely identifies a  
4 customer;

5           a product field that contains a product identifier that identifies a product  
6 used by the customer;

7           a product information field that contains information related to the  
8 product identified in the product field;

9           a customer information field that contains information related to the  
10 customer identified in the customer field; and

11          a product usage field that contains information related to how the  
12 product identified in the product field is used by the customer identified in the  
13 customer field.  
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15          **21.**    The database as recited in claim 20, further comprising a  
16 solutions field that contains instructions for the operator to follow when  
17 information contained in one or more other fields meets certain criteria.  
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19          **22.**    The database as recited in claim 20, wherein the information  
20 related to the customer identified in the customer field further comprises  
21 information related to a history of communications with the customer.  
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23          **23.**    The database as recited in claim 20, wherein the information  
24 related to the customer identified in the customer field further comprises  
25 information about other products purchased by the customer.

1           **24.**     The database as recited in claim 20, wherein:

2           the product is a printing device that utilizes a replaceable component  
3 with component memory;

4           the information contained in the product usage field is obtained by  
5 retrieving printing device usage data stored in the component memory.  
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7           **25.**     The database as recited in claim 20, wherein:

8           the product is a printing device replaceable component with component  
9 memory;

10          the information contained in the product usage field is obtained by  
11 retrieving printing device usage data stored in the component memory, the  
12 printing device usage data being stored in the component memory while the  
13 replaceable component was installed in the printing device.  
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